

**ABSTRACT OF THE DISCLOSURE**

A method and system for ensuring confidentiality of signal transmission in a point-to-multipoint data transmission network like Ethernet passive optical network, including at least one hub, at least one transmission medium and at least one station connected to the hub via the transmission medium. When an upstream signal is transmitted from a first station, the upstream signal is reflected by at least one disturbing reflector for producing a disturbing reflection. The disturbing reflection combines with a second reflection of the upstream signal and renders the second reflection undecodable by a second station.